

# PHENIX WEEKLY PLANNING

TECHNICAL  
SUPPORT  
NO. 1



3/31/2011  
Don Lynch

## This Week:

Maintenance Access yesterday:

- Installed 4 RPC scintillators, 2 each in N & S tunnels
- RICH mainframe replaced
- Flammable Gas sensors adjusted

Next Access : April 13<sup>th</sup> ???

No tasks identified yet

FoCal prototype installation waiting for prototype

Continuing mechanical, electrical and gas system support for Run 11

Plan for shutdown 2011

Future upgrades support

## Next Week

No scheduled maintenance next week.

Continue Prep for FoCal prototype installation (waiting for prototype)

Continuing mechanical, electrical and gas system support for Run 11

Continue planning for shutdown 2011

Future upgrades support

TECHNICAL SUPPORT



Northeast



Southeast



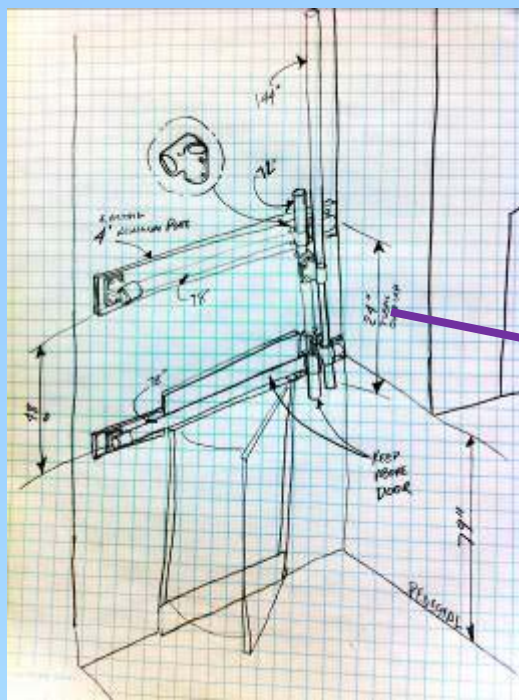
Northwest



Southeast

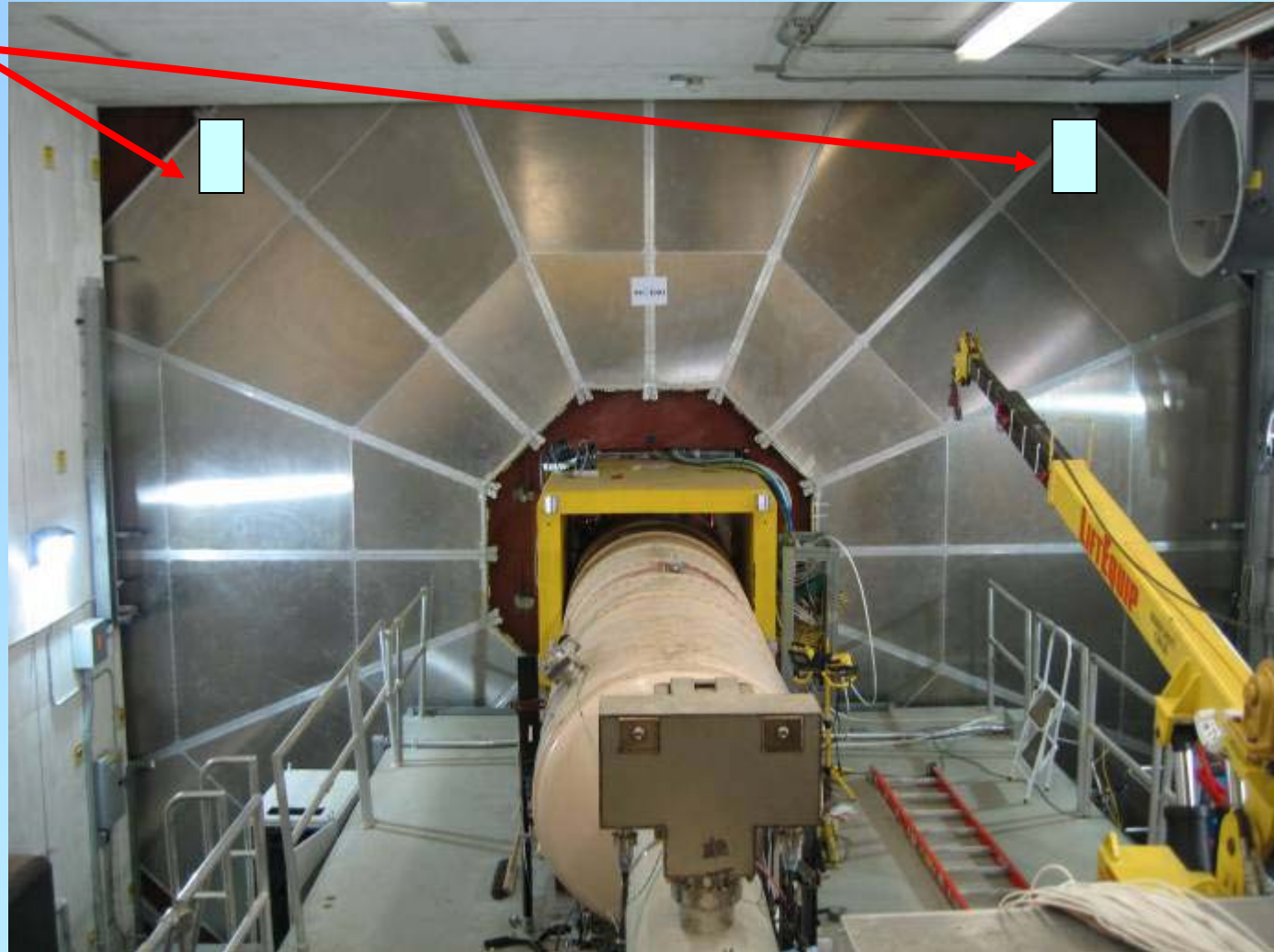
3/31/2011

# RPC Scintillator Installation Concept to installation



Approximate desired coverage areas for scintillator paddles.

Z position is dependent on the thermal vapor wall z position (which is different from east to west) and line-of-sight source of background. Some trial and error adjustment of east-west and vertical locations of scintillator paddles is expected.



RPC3 without thermal vapor barrier, cable trays, etc. (south shown, north is similar)

Installed locations for each of the 4 scintillators (+/- ~ 1 inch):

Distance (z) from the RPC face

- Southeast: 79 inches (2006 mm)
- Southwest: 123 inches (3124 mm)
- Northeast: 25 inches (635 mm)
- Northwest: 131 inches (3327 mm)

Vertical distance above nominal beam height:

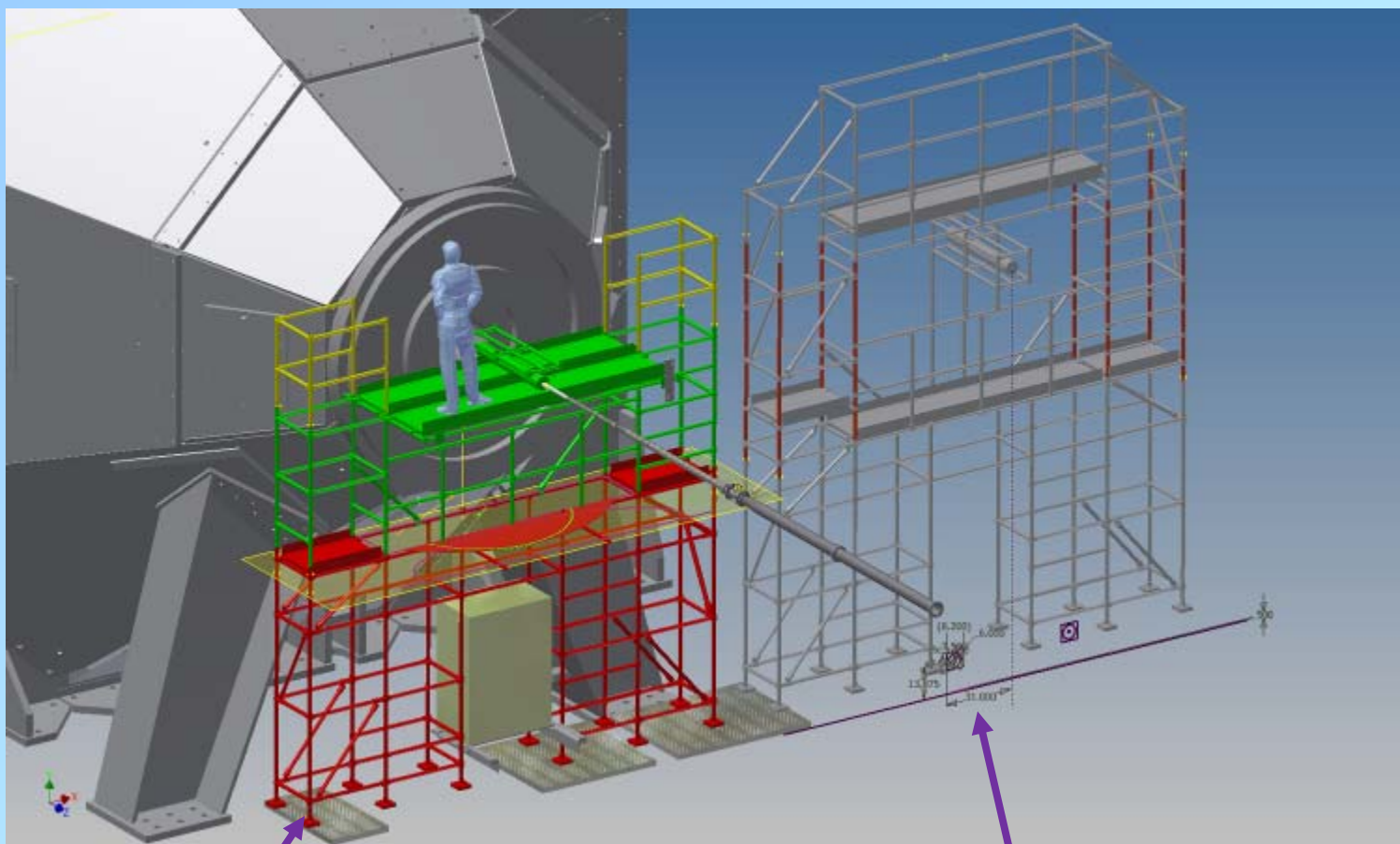
- Southeast: 120 inches (3048 mm)
- Southwest: 114 inches (2896 mm)
- Northeast: 126 inches (3200 mm)
- Northwest: 113 inches (2870 mm)

Horizontal distance from nominal beam center:

- Southeast: 123 inches (3113 mm)
- Southwest: 116 inches (2946 mm)
- Northeast: 127 inches (3226 mm)
- Northwest: 120 inches (3047 mm)

# MuTr & RPC1 Work platform/scaffold

TECHNICAL SUPPORT



Modified Station 1 scaffolding

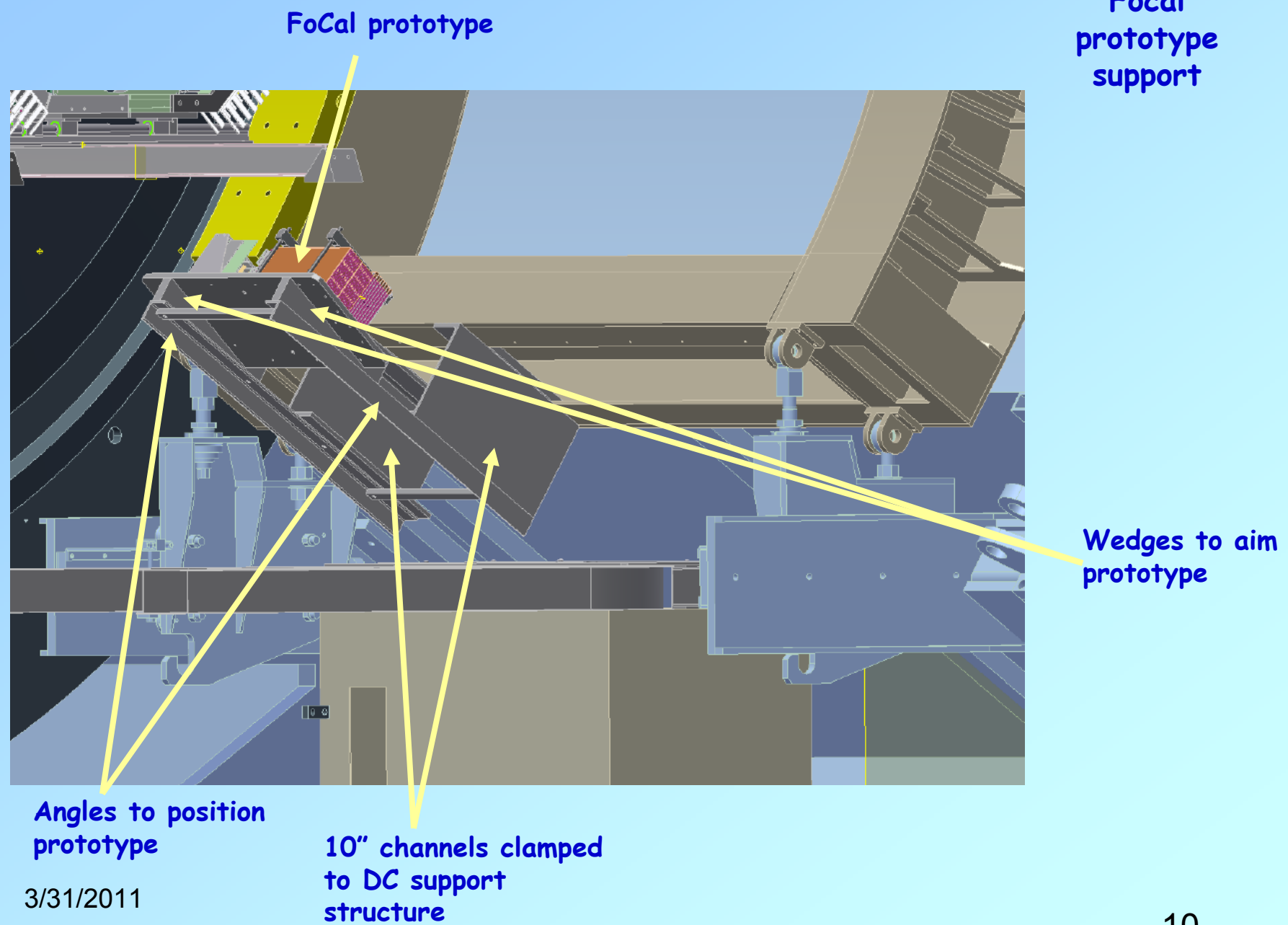
Existing Station 1 scaffolding



MuTr station 1 lifting fixture



TECHNICAL SUPPORT



3/31/2011

# Planning For the 2011 Shutdown

- Prep for shutdown 2/1-6/30/2011
  - Define tasks and goals
  - Analysis and design of fixtures, tools and procedures
  - Fabricate/procure tools and fixtures
  - Tests, mockups, prototypes
  - Receive, fabricate, modify, finish installables (bigwheels, tubing, etc.)
  - Review and approval of parts, tools, fixtures and proceures
  - Assembly and QA tests
- Run 11 Ends 6/30/2010
- Shutdown Standard Tasks 7/1-7/21/2010
  - Open wall, disassemble wall, Remove MuID Collars,
  - Move EC to AH, etc.
- Disassemble VTX services 7/11-7/22
- Remove VTX and transport to Chemistry Lab 7/25/2011
- BBC North maintenance 7/22-7/29/2011
- MuTr North Station 1 work 7/25-9/30/2011
  - Install access (scaffold) (1 week)
  - Disconnect Cables, hoses etc (1 week)
  - Remove FEE plates and chambers (1 week)
  - Station 2 Maintenance/upgrade through access opened by station 1 removal (3 weeks concurrent with next task)
  - Clean/install new parts and upgrades (3 weeks, concurrent)
  - Re-install chambers and FEE plates (1 week)
  - Re-cable, re-hose and test (3 weeks)

# MuTR Recapacitation Clamp Schedule




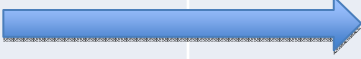
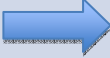

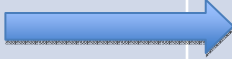
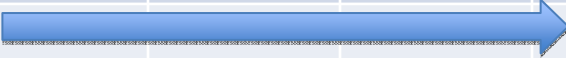
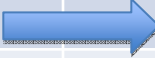
RIKEN/RBRC  
Itaru Nakagawa



Humidity Chamber



# Cramp Schedule

	3	4	5	6	7	8	9	10	11
40 clamps production									
40 clamps Install									
Humidity Test @ test bench									
Desgin Review									
Humidity test @ 1008									
Production									
Install									

# Planning For the 2011 Shutdown (cont'd)

TECHNICAL SUPPORT NOTES

- VTX maintenance/upgrade and integration of FVTX onto VTX support structure 7/25-9/25/2011
  - Disassemble/repair/upgrade/test/reassemble VTX (3 weeks)
  - Resurvey as necessary (1 week)
  - Install FVTX (3 weeks)
  - VTX/FTX survey and QA tests (2 weeks)
- RPC1 and Absorber upgrades 7/25-10/28/2011
  - Install north absorbers (1 week)
  - Install north RPC1 (3 weeks)
  - Install south absorbers (1 week)
  - Install south RPC1 (3 weeks)
- Install VTX&FVTX (2 weeks) 9/26-10/7/2011
- Undefined detector subsystem maintenance and repairs 7/25-10/7/2011
- Prep for EC roll in 10/3-10/7/2011
- Roll in EC 10/10/2011
- Prep IR for run 10/10-10/17/2010
- VTX, FVTX and RPC1 Services and commissioning 9/16-10/31/201
- Pink/Blue/White sheets 10/17-10/31/201
- Run 12 cooldown 11/1/2011

## Tools/Fixtures Needed for Shutdown 2011

- FVTX/VTX modified assembly fixture - in progress
- FVTX inspection tool(s) - not yet specified
- Modified FVTX/VTX installation/transport fixture(s) - not yet specified
- RPC absorber assembly tool(s) - need absorber design first
- RPC absorber installation tool(s) - need absorber design first
- Station 1 North scaffolding - in progress
- RPC1 assembly fixture(s) - need RPC1 design first
- RPC1 transport/installation fixture(s) - need RPC1 design first
- MuTr vacuum lifter dummy load (for load test) - in progress
- MuTr additional lifting fixture(s) (FEM plate) - in progress
- Mu Trigger Stations 2/3 North&South access scaffolding - not yet specified
- Mu Trigger Stations 2/3 North&South Assembly/positioning/holding tool(s) - not yet specified

- Improved/upgraded VTX part(s) - not yet specified
- VTX assembly(s) - not yet specified
- FVTX support structure - in progress
- FVTX big wheels - parts to be fabricated by FVTX group, Brazing to be procured locally
- FVTX Big wheel mounts - parts to be fabricated by FVTX group
- VTX/FVTX arc cable trays and mounts - in design queue
- RPC PE&Pb/Li absorber Components (N & S) - need absorber design first
- RPC PE&Pb/Li absorber assemblies (N & S) - need absorber design first
- RPC PE&Pb/Li absorber mounting structure (N & S) - need absorber design first
- RPC1 components (N & S) - need RPC1 design first
- RPC1N assembly(s) - need RPC1 design first
- RPC1N mounting structure - need RPC1 design first
- BBCN wire management modification - in design queue
- RPC1S assembly(s) - need RPC1 design first
- RPC1S mounting structure - need RPC1 design first
- BBSCS wire management modification - in design queue
- MuTr Repair/Upgrade Parts (including scaffolding) - parts to be supplied by MuTr group except scaffolding which is in progress

- MuTr Repair/Upgrade Assemblies - to be supplied by MuTr group
- MuTrigger Repair/Upgrade Parts (including scaffolding) - parts to be supplied by MuTrigger group except scaffolding which is in design queue
- Parts for Other Shutdown Work
  - Misc. Subsystem Part(s) - not yet specified
  - Gas Mixing House Maintenance and upgrade parts - not yet specified
  - PHENIX Infrastructure Maintenance and improvement parts - not yet specified
  - Gas Pad maintenance/repair/upgrade parts - not yet specified
  - PC1/DC repairs and improvements parts - not yet specified
  - IR Bridge electrical service upgrade parts - not yet specified
  - FoCal Support parts - not yet specified
  - RPC Factory Support parts - not yet specified
  - Rack room upgrades parts - not yet specified
  - CM Crane parts - project is on hold indefinitely
  - CM Alignment Stop parts - in design queue
  - Gas system maintenance/repair/upgrade parts - not yet specified
  - Future upgrade support parts - not yet specified

## Procedures for Shutdown 2011

- Existing PHENIX General Purpose Recurring Task procedures
- VTX Removal
- FVTX/VTX installation
- VTX Survey
- FVTX Survey
- FVTX Cooling System
- RPC borated PE/Pb or Li Absorber
- RPC1 Installation/QA testing/Survey
- MuTr Maintenance & Upgrade
- MuTrigger Maintenance and Upgrade

## Work Permits for Shutdown 2011

- Start of Shutdown
- VTX Removal
- FVTX/VTX Installation
- MuTr Maintenance and Upgrade
- RPC Absorber Upgrade
- RPC1 Installation
- MuTrigger Maintenance and Upgrade
- End of Shutdown

## AH and IR Crane Corrective Actions



IR Crane 1 ton replacement parts received. Paul and Mike R. planning for upgrade work.

AH Crane (both hooks) out of commission until repaired. CAD engineering evaluating options:

- A. Recertify as is (incl. Vendor approval - unlikely)
- B. Remove speed reduction and use as originally equipped - unsafe??
- C. Add bracketry to recertify as is - Feasibility under review
- D. New Drive - cost and lead time
- E. Use portable crane - extremely inefficient



We need this crane ASAP. Shutdown schedule is unacceptably impacted with anything less than a fully functional crane operated by PHENIX techs.

3/31/2011

# 2010 Building Maintenance Issues

TECHNICAL SUPPORT

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall, over door between control room and elect. ass'y room, southeast corner of IR and laser room.
- General maintenance for Trailer Offices (in progress)  
-Repair replace floor tiling as needed
- Flooding in AH/ Driveway
- New connection

Nothing New This Week



## PHENIX Procedure Review Current Status:

### 147 Procedures Identified

- 87 Made Inactive (not currently in use, will reactivate if and when necessary, available for re-activate if
- 9 CAD procedures relevant to the experiment and available on the
- 43 PHENIX procedures (never previously formalized) (3 are ready for
- 9 Procedures (never previously formalized) (3 are ready for

**Nothing New This Week**

Web retrieval of latest procedures now available from PHENIX Internal:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_procedures.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm)

1. RPC Factory annual safety review
  - a) All procedures reviewed and found to be up to date requiring no revisions
  - b) Annual RPC Factory safety system blue sheet testing complete (?)  
(Waiting for IFM to do fire alarm tests)
  - a) Safety walkthru needed, schedule TBD, after blue sheets
2. FoCal Prototype safety review
  - a) Documents prepared and submitted for review - Done
  - b) Installation procedure and work permit in progress - Waiting for prototype
  - c) Assembly of prototype and design of installation/support structure in progress - wire bonding in progress? (Fabrication Done)
  - d) Expect to install during a maintenance access period sometime in April?

3. No BNL injuries reported between 3/7 and 3/30.  
(another week with no incidents: DART, Recordable or First Aid)

4. CPR Training: April 29<sup>th</sup>

Carter, Rob, Frank, Chris, Kenny, Mike L., Chris P. and me.  
Anyone else wanting to get in on this training, please let me know and I'll see if we can get another slot.

# Where To Find PHENIX Engineering Info



Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

